



THE GSCHRONICLES

The Official Newsletter of the NIH Graduate Student Community

Summer 2018

In this issue

Upcoming OITE Events

Page 1

GSC Update

Page 2-4

2018 GPP Annual Retreat

Page 5-8

Career Symposium Recap: So Many Options

Page 9-10

Photon-Counting CT: Why the hype?

Page 11-12

GSC Finding Mentors Lunch

Page 13-14

Comics

Page 15

Upcoming OITE Events

Becoming a Resilient Scientist

Building 49, Room 1A50

Sept 17, 2018, 2:00pm-4:00pm

Careers in Grant Administration (FELCOM)

Building 50, Room 1328

Sept 17, 2018, 3:00pm-5:00pm

Scientists Teaching Science 2Hr Workshop-TWO SESSIONS

Building 45, Room D

Sept 18, 2018, 9:00am-11:00am AND/OR 11:00am-1:00pm

*Also check out the online 9-week pedagogy course, registration opens 9/4/18 at noon

Speaking Up: How to Ask for What You Need in the Lab and Life

Building 49, Room 1A50

Sept 18, 2018, 10:00am-12:00pm

Interviewing for Professional School

Baltimore: BRC 03X227

Sept 19, 2018, 11:00am-12:30pm

Ethics in Research Training for Postdocs

Building 50, Room 1328

Sept 21, 2018, 9:00am-3:30pm

Ethics in Research Training for Postdocs and Grad Students

Building 50, Room 1227 AND Oct 10, 2018, 9:00am-3:30pm

Sept 24, 2018, 9:00am-3:30pm Oct 26, 2018, 9:00am-3:30pm

Check online for locations

Workplace Dynamics I/II: Self-Awareness, The Key to Professional Success

Building 50, Room 1227

Sept 26, 2018, 10:00am-12:00pm

Tune In and Take Care: Managing Stress and Promoting Wellbeing

Building 40, Room 1201/1203

Sept 28, 2018, 10:00am-12:00pm

Workplace Dynamics III: Conflict and Feedback

Building 35, Room 640

Oct 09, 2018, 3:00pm-5:00pm

Much of What You Need to Know to Get Into Grad School

Baltimore: BRC 3C211

Oct 16, 2018, 9:00am-11:00am

Careers in Science Policy (FELCOM)

Building 50, Room 1227

Oct 16, 2018, 3:00pm-5:00pm

Interviewing Strategies

Baltimore: BRC 3C219

Oct 18, 2018, 1:00pm-2:00pm

Planning for Career Satisfaction and Success

Building 40, Room 1201/1203

Oct 30, 2018, 10:00am-12:00pm

The STAR Interviewing Technique

Baltimore: Conference Room 05C409A

Nov 1, 2018, 12:15pm-1:00pm

Industry Careers Overview and Job Packages

Building 35, Room 640

Nov 1, 2018, 10:00am-12:00pm

CVs and Resumes: Essential Job Search Documents

Building 35, Room 610

Nov 8, 2018, 3:00pm-5:00pm

Announcements

Annual Summer BBQ is September 22, 4pm
Join us at 9204 Cypress Avenue
Bethesda, MD

GSC Committee Updates

The Graduate Student Council helps maintain the graduate student community at the NIH. We highly encourage you to get involved with the GSC: come socialize/volunteer/explore at GSC events, like the annual retreat and research symposium, throughout the year. The GSC is made up of five committees, tasked with improving the lives of graduate students at the NIH. Here's an update on what the committees have been up to!

Be sure to join the upcoming events (especially for the Annual Summer BBQ coming up on September 22nd).



FAES Liaison (***new liason needed***)

The Foundation for Advanced Education in the Sciences (FAES) provides educational and professional services to foster a collegial environment for the NIH scientific community. FAES also sponsors the amazing Graduate Student Lounge in Building 10, Room 1N263. If you haven't checked it out, be sure to grab a free cup of coffee and take a break in there!!

*** Interested in getting involved? We are looking for a new liaison to represent the graduate students at the FAES meetings and advocate for improved benefits. This is a great resume builder and an opportunity to learn more about the workings of FAES. Contact GSC-cochair@nih.gov to learn more. ***

Fellow's Committee Liaison

The Felcom liaison represents the graduate student community at the postdocs' Felcom meetings to help bolster a positive relationship between graduate students and postdocs at NIH. Together, we make joint efforts to improve clinical and basic research experiences for all fellows while at NIH. Felcom organizes meetings as well as social networking events for graduate students and postdocs! Be sure to attend these events to meet your fellow peers at the NIH.

Upcoming events:

September 19, 6pm DMV Postdoc Appreciation Happy Hour at Public Bar

GS3 Committee (***new committe chair needed***)

The Graduate Student Seminar Series (GS3) is a great opportunity to practice your presentation skills, get feedback, and promote discussion about your research with peers. These informal talks to other graduate students help display the wide variety of research the graduate students at the NIH are performing. Most recently we had Mike Tisza and Naemeh Pourshafie talk about their research with viral discovery and muscle disorders, respectively. Be sure to come check out the other seminars happening until the end of the year. The GS3 talks start at **5pm** and coincide with the monthly GSC meetings at 5:30pm, so be sure to attend both! You can also sign up to present your research for one of the GS3 talks in 2019!

*** Interested in becoming part of the GSC? We need a new GS3 committee chair to help organize these talks! Contact GSCcochair@mail.nih.gov to learn more. ***

2018 GS3 Speaker List:

September	25	Kristoffer Harum Johansen
October	30	Lampouguin Y. Douti
November	27	Natalia Schneider
December	18	Merage Ghane

Community Service/Mentor/Outreach Committee

This committee provides various volunteering opportunities and mentor/outreach events. Every other month, we volunteer at the Manna Food Bank, where we help pack up boxes of food that are distributed to communities in need. Our committee also organizes Mentor Lunches as an opportunity to hear from NIH PIs to gain from their experiences and words of wisdom about the role of Science today (see article “Finding Mentors Lunch”). We also host a seminar series “PhDs in the Real World” where we bring in members from the diverse fields that PhDs can work in. It’s great to hear about the different pathways to success and to help demonstrate that there are many career options for scientists with a PhD. Most recently, we hosted Dr. Johnathan Molland, a data scientist from Booz Allen Hamilton.

Upcoming events:

September 18, 4pm	PhDs in the Real World: Dr. Marta Gozzi, NIH Clinical Protocol Coordinator
October TBA	Manna Food Bank
October TBA	Finding Mentor Lunch

Social Committee

The social committee helps organize various types of social events for the graduate students. These events have included local happy hours, movie & game nights, trivia competitions, sport watching/fantasy leagues, ski trip, camping and biking weekends as well as the Annual Summer BBQ event. We also interact with the various postdoc and postbac communities to promote fellow interactions. But our main goal is to help bring the graduate students together to make sure you know that you are not alone on the big NIH campus. We recently hosted a happy hour after the Graduate Student Retreat and had a great turnout! It was awesome meeting many new people and seeing old friends from various labs across the campus. This summer we also held various happy hours, with both postbacs & postdocs, organized some biking & bike/camp trips, went to jazz in the garden and watched some of the awesome World Cup together. Our next big event is the upcoming Annual Summer BBQ, which is happening September 22nd, so be sure to attend!

Upcoming events:

September 16, 7pm	“Who wants to be a grad student?” comedy event
September 15-16	Biking and Camping Trip on C&O Canal
September 22nd, 4pm	Summer BBQ, 9204 Cypress Avenue, Bethesda MD
early October TBA	Bowling with postbacs

2018 GPP Annual Scientific and Professional Development Retreat



The Graduate Partnerships Program (GPP) Annual Scientific and Professional Development Retreat was hosted by the Office of Intramural Training and Education (OITE) on August 3rd, 2018 at HHS headquarters, right off the National Mall in D.C. The keynote speakers inspired the theme of the retreat, which hoped to introduce those in attendance to two outside-the-lab ways scientists in the D.C. area are engaging with the general public. The day began as students gathered in the “penthouse” to take in the views of the U.S. Capital from the room’s numerous balconies. OITE director Dr. Sharon Milgram started the day with a warm reminder for graduate students to seek support through her office in times of trouble.

Kasha Patel, science writer for NASA by day and standup comedian by night, gave the morning keynote. Patel showcased her keen sense of humor with a bit of crowd work as she asked students about their fields, deftly pointing out the absurdity of scientific obscurity. She recalled her own experiences experimenting with science jokes in front of regular draughthouse audiences and how the experience shaped her ability to communicate in general. Patel’s presentation was a side-splitting romp through photos she had curated from the NASA Earth Observatory’s collection and anecdotes of trying to meet overly-technical scientists and comically-blunt members of the public somewhere in the middle.

To wrap up the morning session, students were broken into groups and challenged to “tell their graduate stories” in just fifteen minutes with a series of thirty seemingly random images: a beautiful beach, Serena Williams winning a Grand Slam, a bear digging through a garbage can, and more. The audience returned to side-splitting laughter as representatives presented their group’s story. Their laughter at common experiences solidified the sense of community that is sometimes hard to find amidst our disperse graduate program. Common themes began to emerge as each group layed out their interpretation.

Serena Williams became a symbol of elation following a well-executed experiment. The beach oasis was the #1 destination following a student's thesis defense. The bear in the trash might be a second attempt at data analysis. Particularly clever uses of pictures won rounds of applause from the audience.

During lunch, students caught up with old friends, made new introductions, and took a few more selfies with the U.S. Capitol and Botanical Gardens Conservatory as a backdrop. To further entice graduate students to mingle, the afternoon session kicked off with a so-called "PANDEMIC! Bingo," in which students had to find others matching risk factors for a contagion and trace the path of transmission. Four prize winners received their choice of book from the FAES book shop.

Dr. Daniel Lucey, a professor at Georgetown University's O'Neill Institute for National and Global Health Law, delivered the afternoon keynote. Lucey began with an outline of his experience over the last three decades treating patients during international disease outbreaks. From there, the audience's enthusiasm and curiosity took over, as they asked question after question. Lucey's first hand experience with the pathogens and the patients they affect deeply touched the students, offering a perspective easily lost when spending hours distilling viruses down to their proteins and pathways of infection. An hour seemed like far too short a time for Lucey to share the depths of his "lessons learned from actions taken." Perhaps this feeling motivated Lucey to pursue the creation of a new exhibit at the Smithsonian's National Museum of Natural History, "Outbreak: Epidemics in a Connected World." He briefly described his role in its design, emphasizing the choices he made to help audiences look past possible misperceptions of infectious disease and the people they effect. After describing the features of the exhibit, he lead the audience on a walk across the National Mall to experience it for themselves.

As students entered the museum, they made their way past the looming elephant in the lobby to venture to the new exhibit upstairs. Inside, the panels of the exhibit draw from the histories of several different infectious disease including HIV/AIDS, Ebola virus, and influenza to introduce the audience to the underlying elements driving zoonotic events and pandemic spread. The displays are textured with 3D representations of viral capsids, taxidermied bats, glass cases full of thousands of delicately mounted mosquitoes, and 100 word, first-hand accounts of patients and healthcare professionals involved. Throughout the exhibit are familiar faces from NIH including Dr. Jeffery Taubenberger and Dr. Kanta Subbarao. The content strikes a respectful balance between inciting curiosity and paying tribute to those affected.

I'd like to thank my fellow Graduate Retreat Committee members Nicholas Ader, Larissa Erben, and Albert Sek for helping me plan this year's retreat. Our thanks goes out to Phil Ryan, Philip Wang, Sharon Milgram, and the OITE staff who helped us realize our vision. The eighty plus students in attendance certainly made the day a success. I for one am looking forward all getting together again, perhaps next year at the zoo.

SO MANY OPTIONS

Dana Lewis

The 11th annual NIH Career Symposium, hosted by the Office of Intramural Training and Education (OITE), covered a host of career paths from industry and academia to science writing, education, and outreach. The “Skill Blitz” sessions in the afternoon provided tools for acting upon information learned earlier in the Symposium, including an amazing talk by Sharon Milgram about how to transition from graduate school to any future job.

The day was full of useful, practical information and advice for graduate students and post-docs investigating different career paths. Every panelist and speaker seemed to echo the same thing: There are so many options and career paths for scientists. Identify what you are interested in, what your skills are, how you think about science, and how/where you want to have the greatest impact, and let

Potential Career Options:

- Science education and outreach
- Industry and research development
- Investment and consulting
- Science administration
- Science writing and editing
- Non-profit organizations
- Federal government
- University//academia
- Technology transfer and patent
- Teaching
- Science policy and advocacy
- Science illustrator
- And more!

those answers guide your career path.

Several key points were reiterated throughout the day:

1. There are no *alternative* science careers; there are careers in science.
2. Networking! Networking! Networking!
3. Regardless of the career path you choose, you must have demonstrable, relevant skills on your CV. Explicitly state the skills and experiences you have, including those gained from a PhD program, and work to cultivate the skills necessary for the position you want.
4. Communicating your science effectively is important in all science careers.
5. Work towards a specific goal using an Individual Development Plan (<http://myidp.sciencecareers.org>).

Check out the OITE website for speaker bios and a newsletter about each session at the symposium (https://www.training.nih.gov/nih_career_symposium).

How do I get demonstrable skills on my CV?

- Alan Alda Center for Communicating Science
- Friends of Joe's Big Idea
- NIH Office of Science Policy, Planning, and Communication
- AAAS Science Writing and Communication Internships
- NIH BEST Program
- NIH Catalyst
- Attend events like the Career Symposium
- Association of Health Care Journalists
- Volunteer at schools, science fairs, museums, etc.
- Science Cafes
- Scientista
- NIH Fellows Editorial Board
- DC Writer's Association
- Teach through FAES
- Story Collider
- Scientists Teaching Science Course
- National Association of Science Writers

Photon-counting CT: Why the hype?

Jayasai Rajagopal

Computed tomography (CT) is a modality that produces 3-dimensional volumetric images using x-rays. CT provides anatomical information and superior soft tissue contrast as compared to other modalities. This information can be used to examine internal anatomy, provide positional context for other imaging methods like PET, and identify irregularities within various organs. However, conventional CT has a limited capacity to provide functional information when compared to other modalities like MRI.

The x-rays used in CT imaging can attain a spectrum of energies. In conventional CT, this spectrum is combined together to produce images, leaving an entire dimension of information unused. But spectral CT, while also preserving the advantages of a conventional CT, retains the spectral information to allow for more advanced and even functional imaging. The most common method of spectral CT is dual-energy CT, which generates two sets of images with different energy spectra. While there are several ways to create the two datasets, all methods record two different spectra which can then be combined in several ways to provide functional information.

Photon-counting CT is a different approach to spectral CT, utilizing a different kind of detector to “count” or bin the incoming x-ray photons instead of integrating them to create two images. These different detectors offer several exciting advantages over standard detectors. Since the binning done by photon counting detectors is based on thresholds, the energy spectra can be divided into more than two sections, creating more

datasets than dual-energy CT. With the use of multiple different contrast agents, photon-counting CT enables a study focusing on multiple functions with one scan. The new detectors also have higher resolution than standard detectors, which allows for greater precision in imaging.

At the NIH, there is a lot of excitement for this new technology as we look at the new potential clinical applications that it opens up and we study how to best take advantage of these new applications. A recent summit at NIH between clinical, academic, and industry groups discussed the exciting new directions we can develop with this technology looking towards the future of improved clinical care.

GSC Finding Mentors Lunch

Jessica Schneller and Albert Sek



Back by popular demand, the “Finding Mentors and Building Networks” event provides graduate students with the opportunity to connect with principal investigators across NIH institutes and research disciplines. Initially started by Kara

Fulton (an NIH-Brown program alumnus and former GSC co-chair), current grad students Albert Sek and Francois de Mets have continued to organize this well-received event. In the past year, the two have held three mentoring events.

The series kicked off in December 2017 with [Dr. Helene Rosenberg](#) (NIAID) and [Dr. Mark Histed](#) (NIMH), during which the two investigators fielded questions from graduate students and discussed a range of topics – from their personal career trajectories to the challenges of balancing work with one’s personal life.

The series continued in January 2018 with [Dr. Lisa Cunningham](#) (NIDCD) and [Dr. Jon Yewdell](#) (NIAID), author of multiple resources on success in graduate school and biomedical careers, including an article in *Nature Reviews Molecular Cell Biology* on “How to Succeed in Science: A Concise Guide for Young Biomedical Scientists” and a recent book “Truth Wins: A Practical Guide to Succeeding in Biomedical Research.” Together, the pair discussed the challenges of mentoring relationships as well as specific strategies to identify and develop multiple mentors.

The series concluded in April 2018 with [Dr. Michael Gottesman](#) (NCI) and [Dr. Susan Gottesman](#) (NCI), who together discussed their respective career trajectories as well as career development for students.

Together, the events in this series provide graduate students with a rich opportunity to learn from and interact with a cross-section of principal investigators. Each event has featured both male and female PIs at various stages of their career, allowing for diverse insights into the graduate training experience and career development. The relaxed setting – a group of graduate students, chatting for approximately an hour – allowed students to learn from one another's experiences and ask questions.

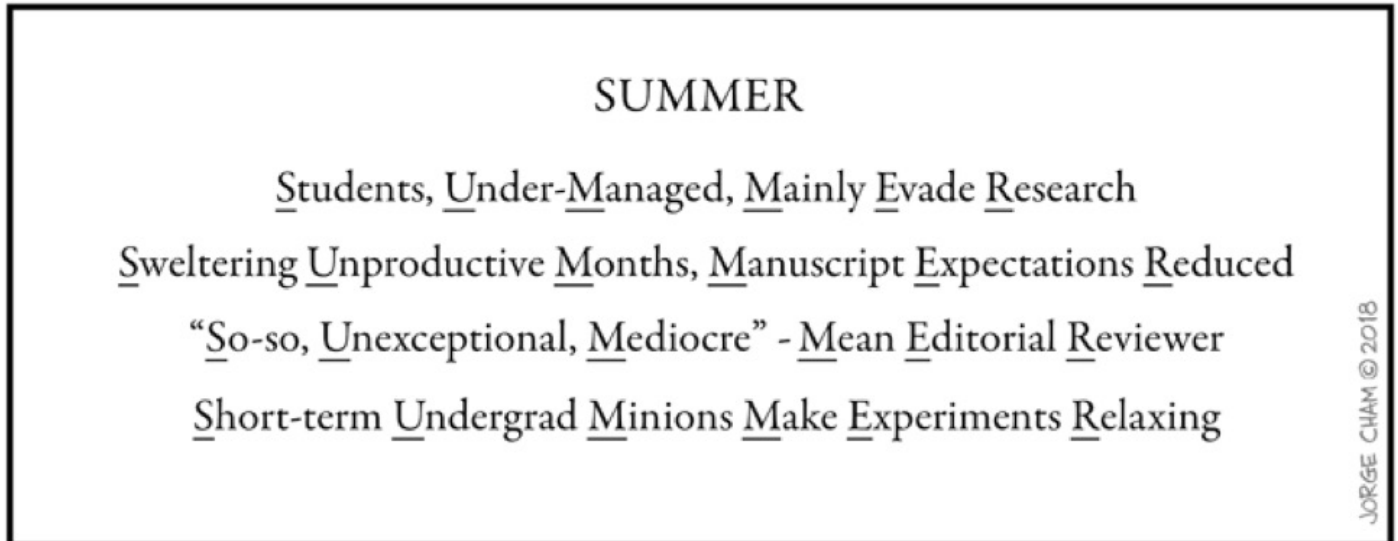
As pointed out by Dr. Gottesman, NIH investigators are not traditionally tasked with mentoring graduate students, which affords students the unique opportunity to shape what kind of mentor their advisers become. He counseled students to be open-minded about their careers and to consider what gives them pleasure and satisfaction, telling students that in the end they need to choose the career path that provides both: “Life isn't so long that you can afford to be unhappy!”

Comics

Piled Higher and Deeper by Jorge Cham

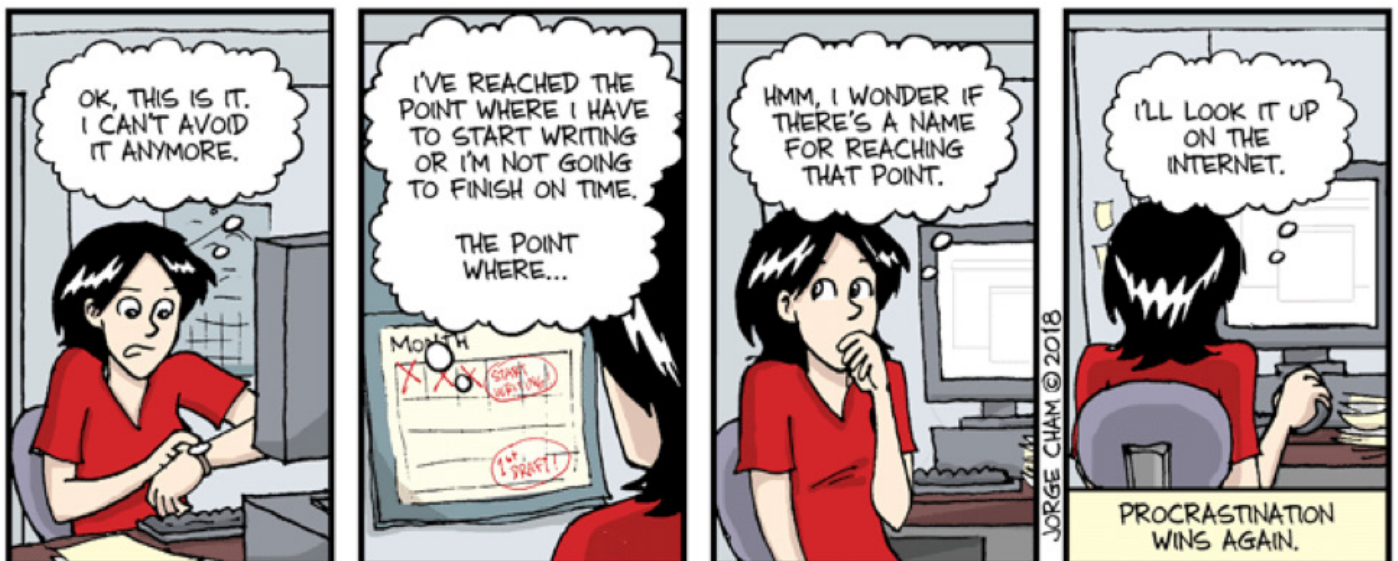
“The Summer Acronym” -originally published 8/3/2018

www.phdcomics.com



WWW.PHDCOMICS.COM

“The Point of No Returns” -originally published 7/27/2018



The GS Chronicles Team

Writers and Contributors

Allison Dennis

Mohsin Khan

Dana Lewis

Jaysai Rajagopal

Albert Sek

Jessica Schneller

Keyla Tumas

Editors and Design

Amit Khandhadia

Dana Lewis

Sharon Milgram

Phil Ryan

Phil Wang

Want to contribute?

We are looking for content for the next Chronicles issue!

Artwork: Have a doodle, a comic, or a drawing that you want to share? Showcase your skills to your fellow classmates. When you become famous, the GPP will look really good for publishing your early work.

Creative writing: Write poetry, short stories, or essays and looking for somewhere to disseminate your work? You won't find sci-fi and literature aficionados like us anywhere else!

Student Spotlight: Introduce yourself to your fellow grad students by writing a short blurb about yourself and your thesis work and/or scientific interests. You may just land an awesome collaboration!

Please send your publications, awards, graduation, and birthday announcements to GSChronicles@od.nih.gov for recognition.

We would love to hear from you!